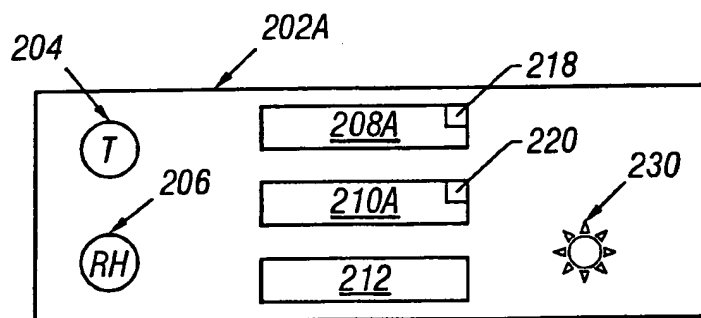
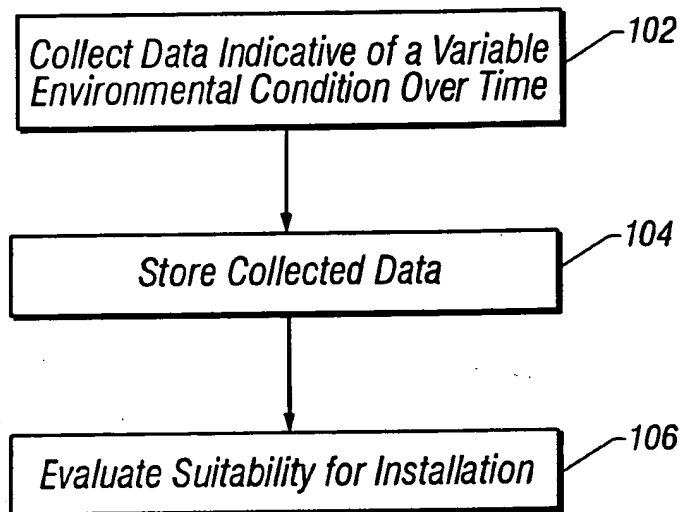
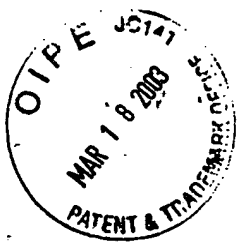
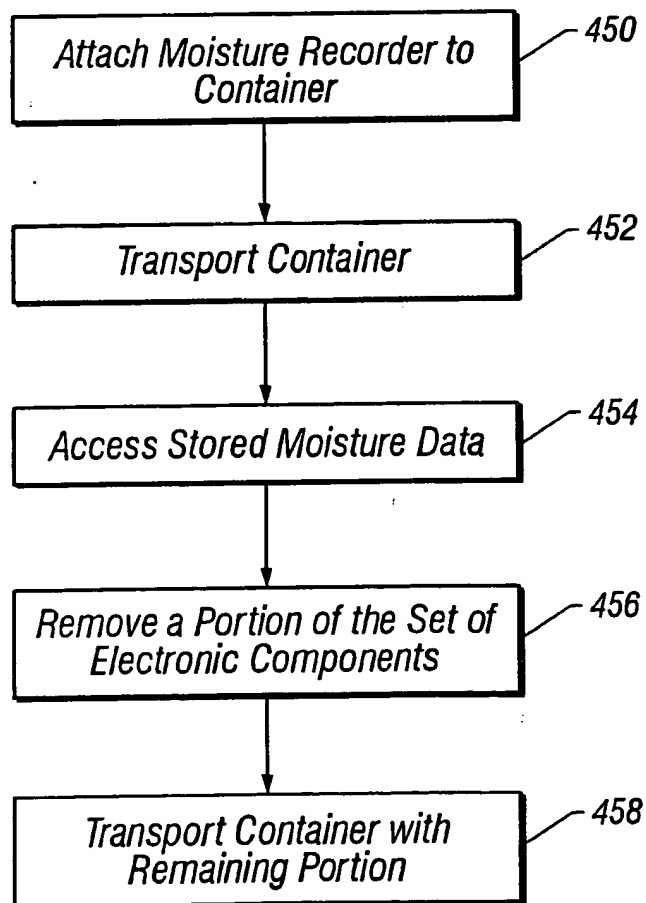
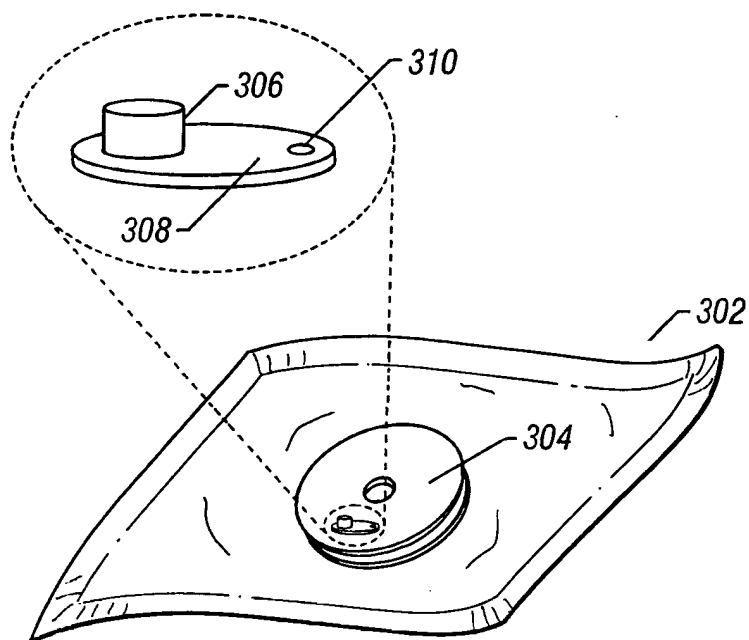
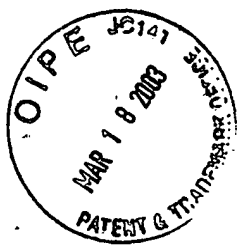


**FIG. 2A**

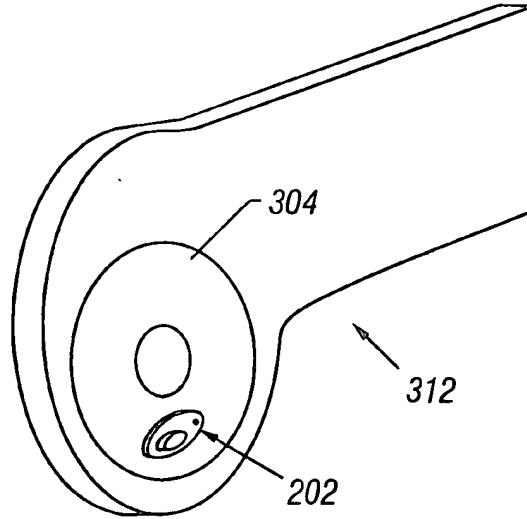
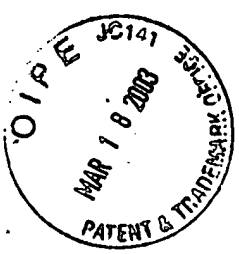


**FIG. 2B**

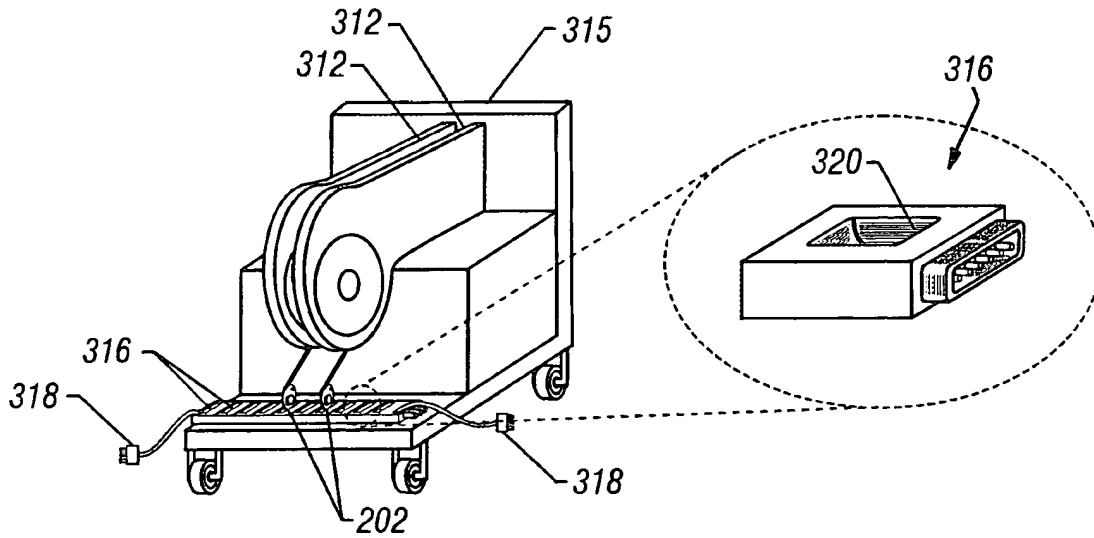
**FIG. 1****FIG. 4**



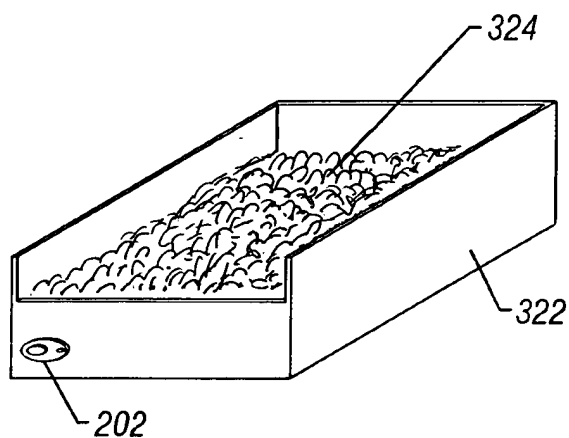
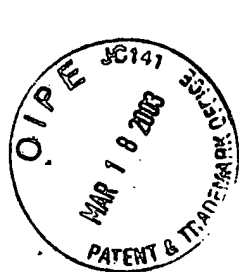
**FIG. 3A**



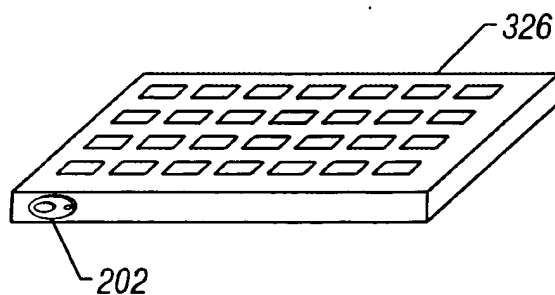
**FIG. 3B**



**FIG. 3C**



**FIG. 3D**



**FIG. 3E**

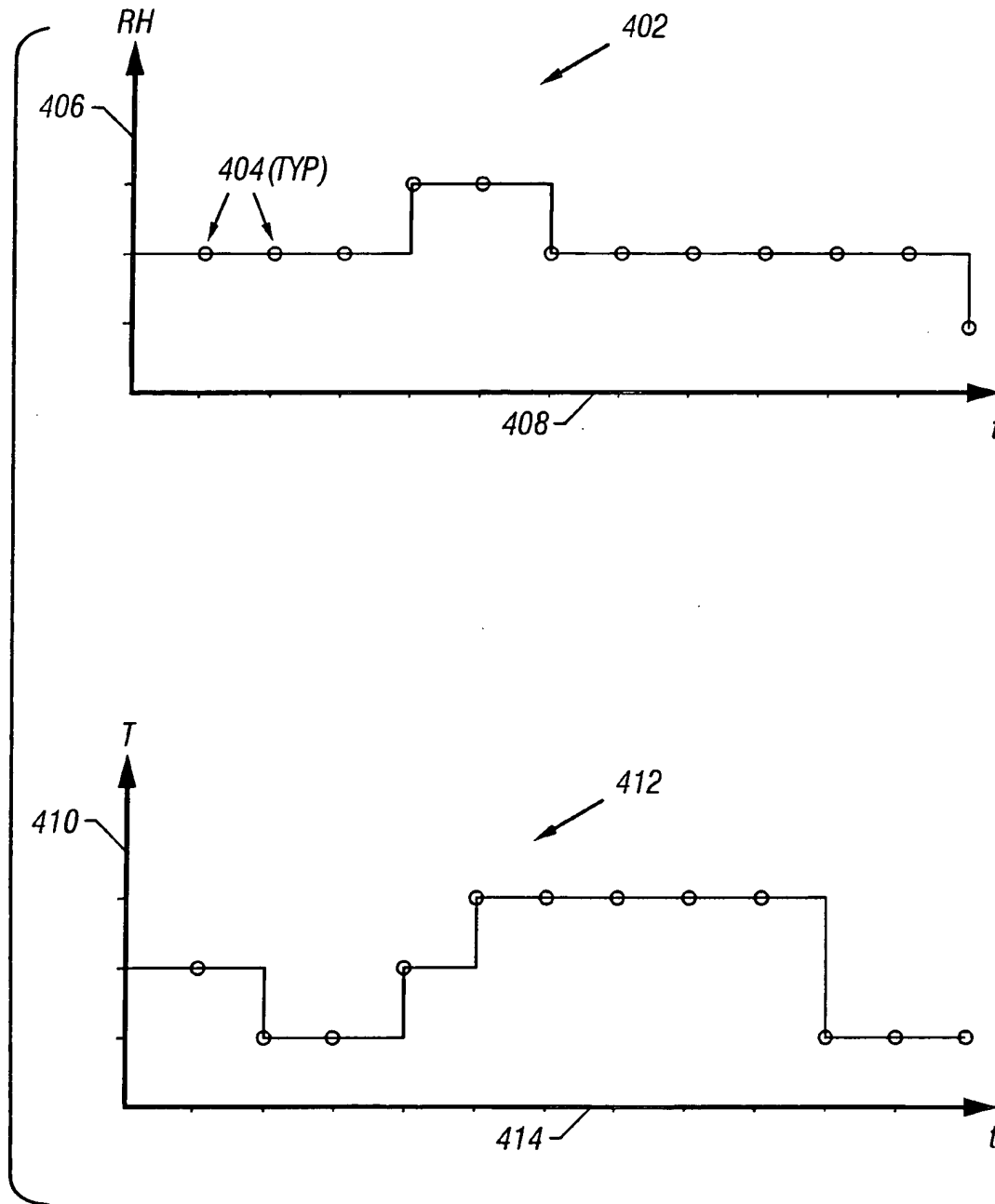
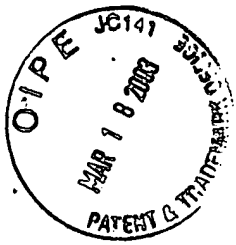


FIG. 5

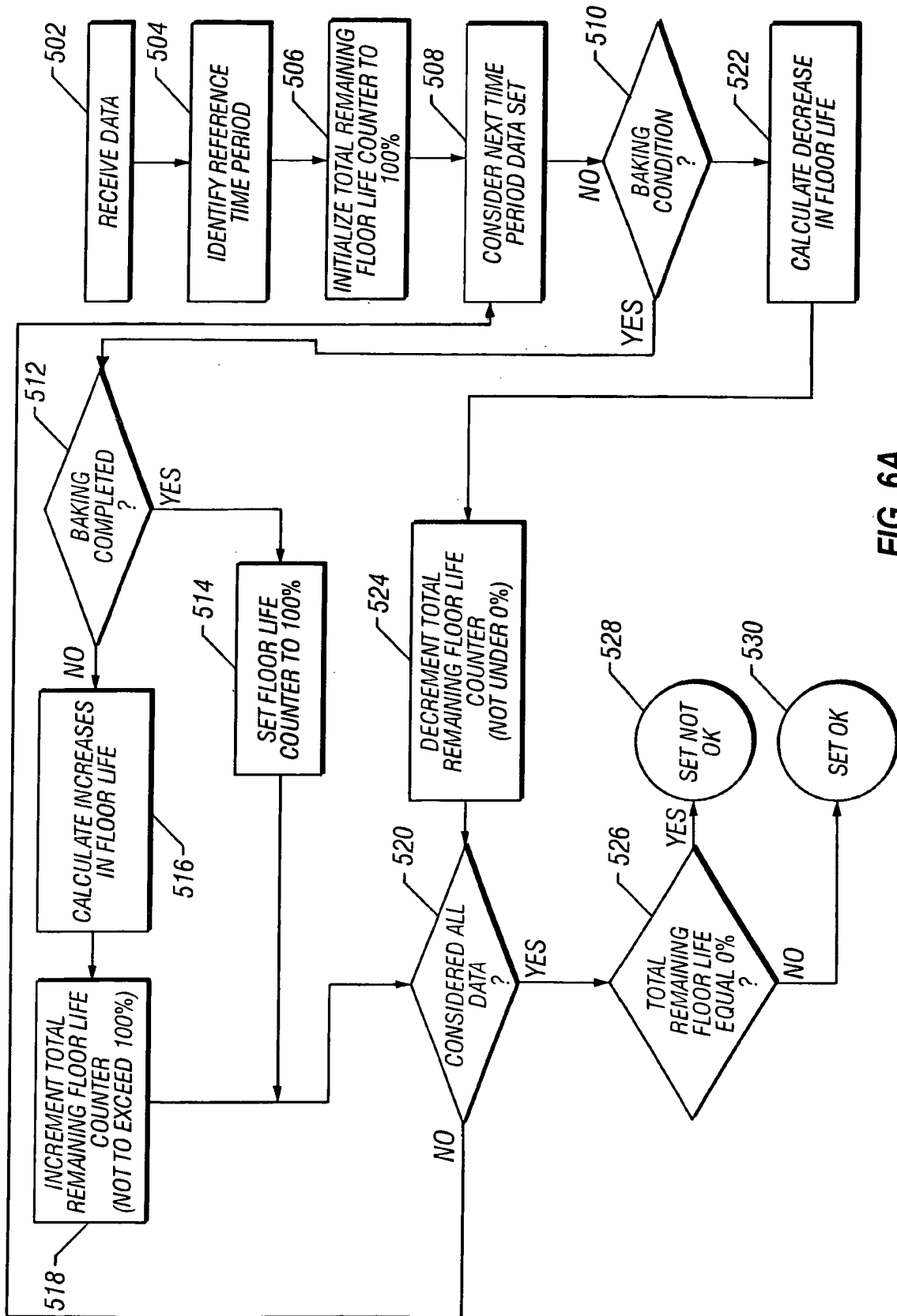
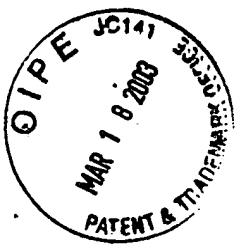


FIG. 6A

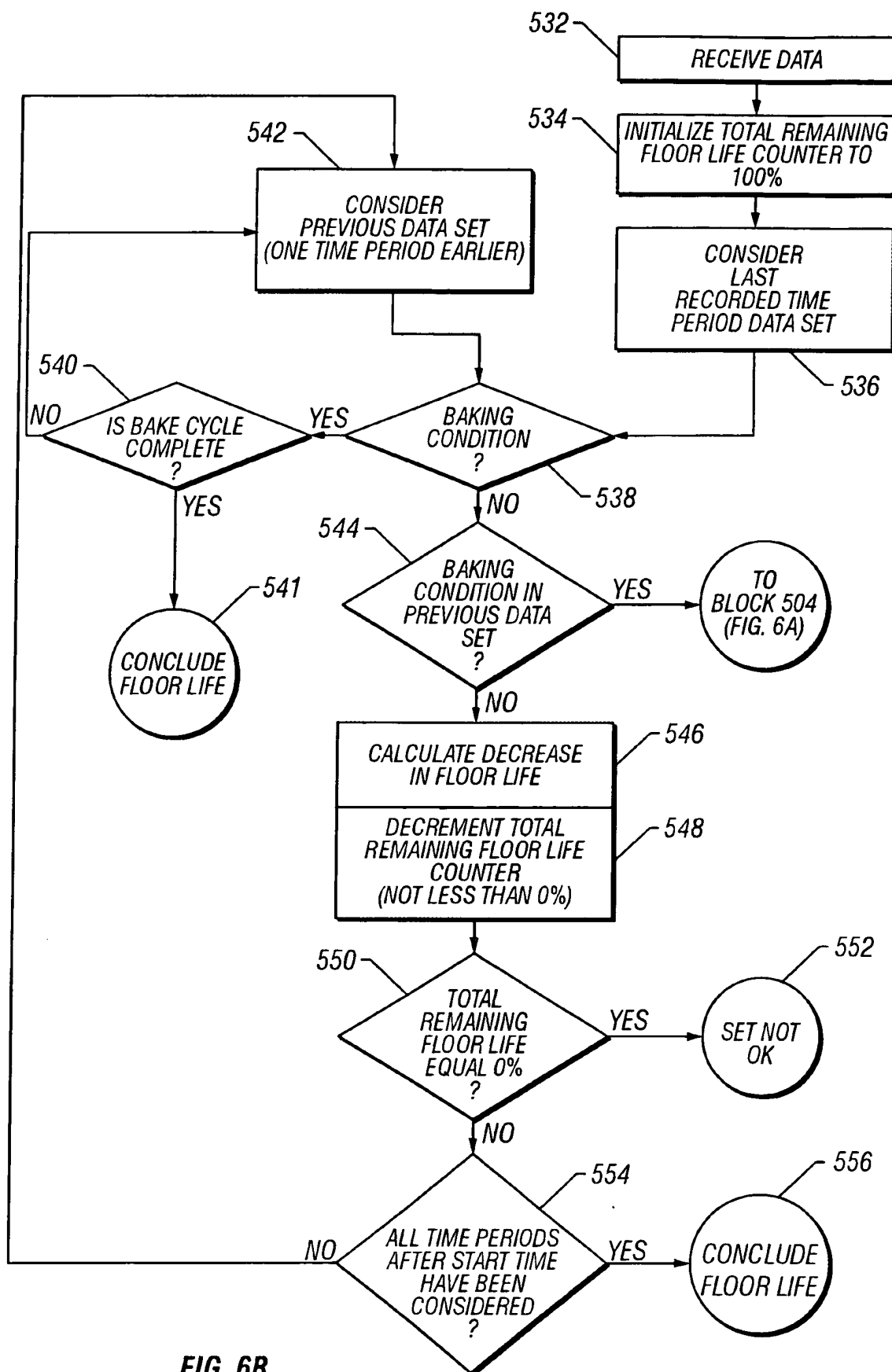
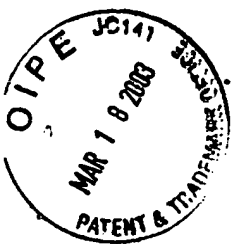
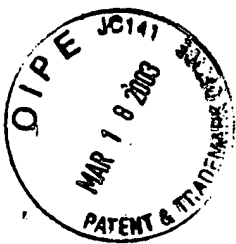


FIG. 6B





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IPC/JEDEC J-STD-033

April 1999

**TABLE 5 Recommended Equivalent Total Floor Life (days) @ 20°C, 25°C & 30°C  
For ICs with Novolac, Biphenyl and Multifunctional Epoxies  
(Reflow at same temperature at which the component was classified)**

		Maximum Percent Relative Humidity									
Body Thickness (t)	M.S.Level	20%	30%	40%	50%	60%	70%	80%	90%		
$t > 3.1\text{mm}$ PQFPs > 84 pins. PLCCs (square) MQFPs or PBGAs	Level 2a	$\infty$	60	41	33	28	10	7	6	30°C	
		$\infty$	78	53	42	36	14	10	8	25°C	
		$\infty$	103	69	57	47	19	13	10	20°C	
	Level 3	10	9	8	7	7	5	4	4	30°C	
		13	11	10	9	9	7	6	5	25°C	
		17	14	13	12	12	10	8	7	20°C	
	Level 4	4	4	4	3	3	3	2	2	30°C	
		5	5	5	5	4	3	3	3	25°C	
		7	7	7	7	6	5	4	4	20°C	
	Level 5	3	3	2	2	2	2	1	1	30°C	
5		4	4	3	3	2	2	2	25°C		
7		6	5	5	4	3	3	3	20°C		
Level 5a	1	1	1	1	1	1	1	1	30°C		
	2	2	2	2	2	1	1	1	25°C		
	4	3	3	3	2	2	2	2	20°C		
$t \leq 2.1\text{mm}$ $t < 3.1\text{mm}$ PLCCs(rectangular)18-32 pins SOICs(wide body) SOICs $\geq 20$ pins PQFPs $\leq 80$ pins	Level 2a	$\infty$	$\infty$	86	39	28	4	3	2	30°C	
		$\infty$	$\infty$	148	51	37	6	4	3	25°C	
		$\infty$	$\infty$	$\infty$	69	49	8	5	4	20°C	
	Level 3	19	12	9	8	7	3	2	2	30°C	
		25	15	12	10	9	5	3	3	25°C	
		32	19	15	13	12	7	5	4	20°C	
	Level 4	5	4	4	3	3	2	2	1	30°C	
		7	5	5	4	4	3	2	2	25°C	
		9	7	6	6	5	4	3	3	20°C	
	Level 5	3	3	2	2	2	1	1	1	30°C	
4		3	3	3	3	2	1	1	25°C		
5		5	4	4	4	3	3	2	20°C		
Level 5a	1	1	1	1	1	1	0.5	0.5	30°C		
	2	2	2	2	2	1	1	1	25°C		
	2	2	2	2	2	2	2	1	20°C		
$t > 2.1\text{mm}$ TSOPs, SOICs < 18 pins TQFPs or or TBGAs	Level 2a	$\infty$	$\infty$	$\infty$	$\infty$	28	1	1	1	30°C	
		$\infty$	$\infty$	$\infty$	$\infty$	$\infty$	2	1	1	25°C	
		$\infty$	$\infty$	$\infty$	$\infty$	$\infty$	2	2	1	20°C	
	Level 3	$\infty$	$\infty$	$\infty$	11	7	1	1	1	30°C	
		$\infty$	$\infty$	$\infty$	14	10	2	1	1	25°C	
		$\infty$	$\infty$	$\infty$	20	13	2	2	1	20°C	
	Level 4	$\infty$	9	5	4	3	1	1	1	30°C	
		$\infty$	12	7	5	4	2	1	1	25°C	
		$\infty$	17	9	7	6	2	2	1	20°C	
	Level 5	13	5	3	2	2	1	1	1	30°C	
18		6	4	3	3	2	1	1	25°C		
26		8	6	5	4	2	2	1	20°C		
Level 5a	3	2	1	1	1	1	1	0.5	30°C		
	5	3	2	2	2	1	1	1	25°C		
	6	4	3	2	2	2	2	1	20°C		

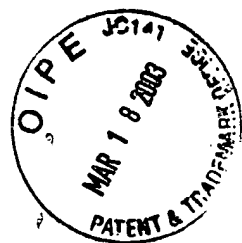
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**FIG. 7  
(Prior Art)**

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Package thickness	Level	Bake@125°C	Bake@40°C ≤5%RH
≤1.4 mm	2a	4 hours	5 days
	3	7 hours	11 days
	4	9 hours	13 days
	5	10 hours	14 days
	5a	14 hours	19 days
≤2.0 mm	2a	18 hours	21 days
	3	24 hours	33 days
	4	31 hours	43 days
	5	37 hours	52 days
	5a	48 hours	68 days
≤4.0 mm	2a	48 hours	67 days
	3	48 hours	67 days
	4	48 hours	68 days
	5	48 hours	68 days
	5a	48 hours	68 days

Table 2 Reference Conditions for Drying Components that were Exposed to Conditions ≤60% RH  
(User Bake: Floor Life Begins Counting at Time = 0 after bake)

**FIG. 8**  
**(Prior Art)**

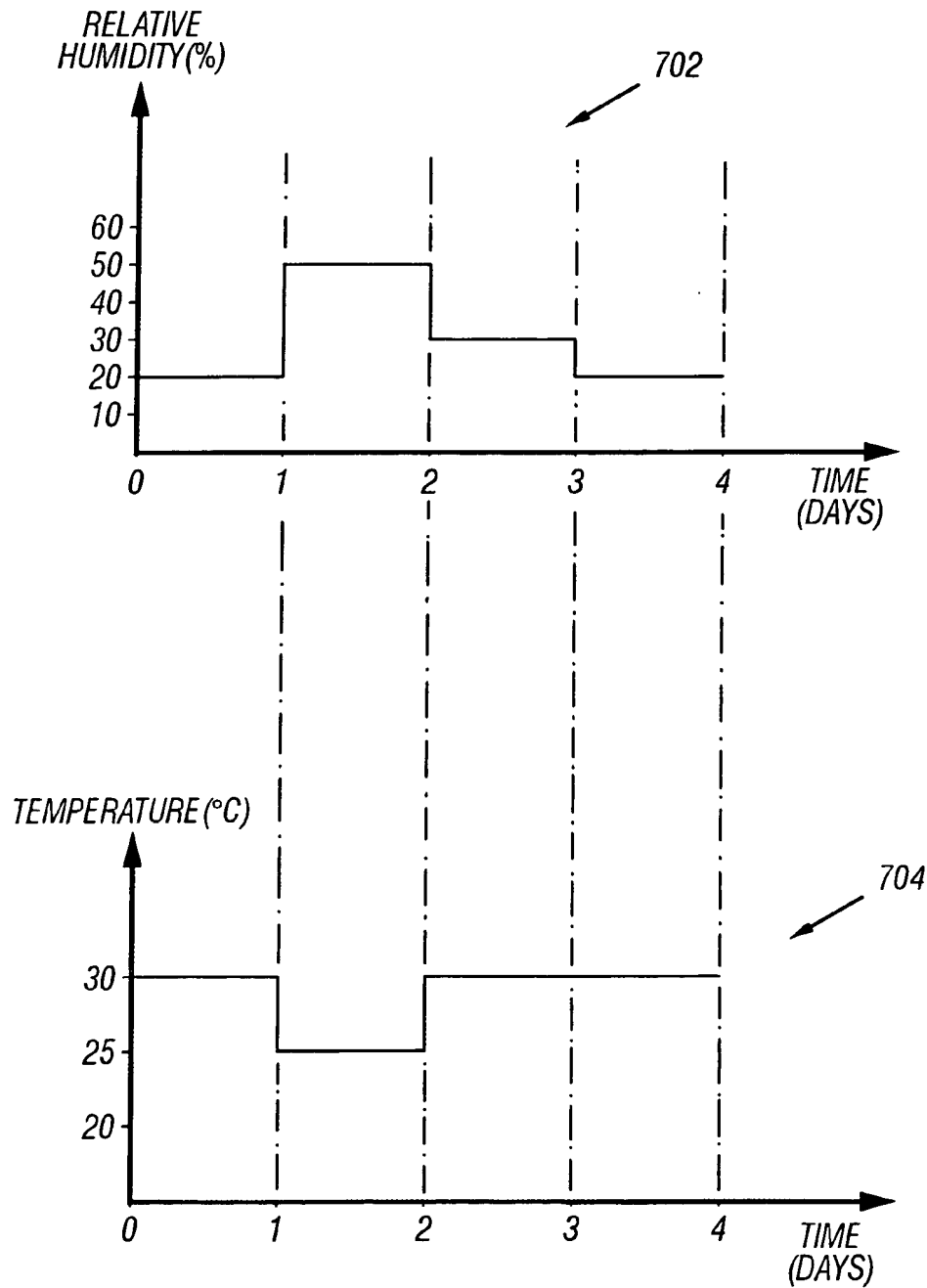
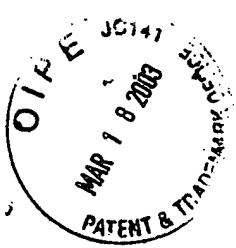


FIG. 9